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ABSTRACT

This report presents the findings of a survey designed to determine the perceived role of the K-12 science supervisor. Surveys were administered to samplings obtained at three 1978 National Science Teachers Association (NSTA) area conventions (Los Angeles, New Orleans, and Milwaukee) and from individuals in selected states to ensure a valid, random, geographic sample. Participants (K-12 teachers and principals) were asked to rank the following categories in priority order as they perceived them to be most beneficial as roles of the science supervisor: instruction; curriculum; staff development; implementation; management; assessment; assignment; and transfer load. Findings are presented in seven bar graphs. In addition, comments from survey participants regarding roles believed to be helpful in increasing a science supervisor's effectiveness are included. Also included are NSTA science supervision recommendations for each of the seven areas. For example, it is recommended that supervisors assist in the development of instructional materials, assist in evaluating promising new developments in science education, develop in-service programs based on teachers' needs, initiate proposals for instructional objectives, and disseminate information related to laboratory safety. (JN)

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NATIONAL SCIENCE TEACHERS ASSOCIATION

DIVISION OF SUPERVISION

REPORT

OF

SURVEY

ON

"PERCEIVED ROLES OF THE SCIENCE SUPERVISOR BY K-12 TEACHERS AND ADMINISTRATORS

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INTRODUCTION

The perceived role of the science supervisor in America today has generated concern among teachers, administrators and science supervisors themselves. Interestingly enough, this area of concern has surfaced rather strongly at a time when accountability became a watch-word in education. Moreover, in the last few years, public support for schools has reached a bottom low. The recent budget cuts in Washington has practically wiped out financial support for NSF Science Education projects. School systems have trimmed down their support personnel, including science supervisors, and tend to move in the direction of hiring generalists rather than specialists.

The Division of Supervision of NSTA initiated a study on the perceived role of the Science Supervisor, K-12, across the nation. A position statement of the National Science Teachers Association recommends that school systems employ one or more science specialists to accomplish the tasks of the science program. A science specialist can be a supervisor, coordinator or consultant specializing in the area of science and science education. The NSTA Division of Supervision further supports efforts by the Council of State Science Supervisors, the National Science Supervisors Association and state organizations such as the New York State Science Supervisors Association, in their efforts to preserve the position of the science supervisory specialists.

The question of role perception of a position has generated a considerable amount of research within the educational enterprise. The theoretical construct of role has been defined by several investigators. Role has been defined as the individual's function in formal organizations and groups to which a person belongs. Actions of individuals are organized around positions. Each position in a group has an organized system of role perception or expectation by other individuals. It is on this basis that the survey on the perceived role of the science supervisor by teachers and administrators was conducted.

It is toward this end -- that of defining the role of the science supervisor, K-12, that this survey was conducted. A definition of the role of the science supervisor could be a basis for implementing the science program at the school district level, as recommended by NSTA. Hopefully, the results of this survey will help in the delineation of the role functions of the science supervisor in America today.

RATIONALE FOR THE SURVEY STUDY

The survey was selected by the NSTA Supervision Committee for the following reasons:

a. Due to inflation and declining economic support for curriculum implementation in science, a number of school districts appear to be moving toward curriculum generalists rather than specialists.
b. The accountability movement throughout the educational fields has mandated that supervisors seek a vehicle by which they could evaluate the services being provided or should be provided for the teacher and administrator.

c. In many science areas, other than science education majors, teachers with minors in science are being reassigned to teach science courses. These reassigned teachers need the expertise of the Science Specialist.

HISTORY AND BACKGROUND OF THE STUDY

The first NSTA Supervision Committee (1975-76), recommended that NSTA reaffirm the value of and need for the Science Supervisor as a subject matter specialist. During 1977-78, the Supervision Committee solicited input from various sources regarding the role of the supervisor in science education. The proposed first draft of the survey was developed and reviewed by the Supervision Committee, and at a Supervision Committee meeting in June, 1978, in Washington, D.C., the survey was revised. The Committee recommended to the NSTA Board of Directors that the survey be printed administered to a sample of teachers and administrators, and evaluated. It has been accepted that a random sampling is as valid as an "every member" survey. In 1977-78 the Committee voted to fund the printing and distribution of the survey during the 1978 Summer Board Meeting, to alleviate any financial burden for NSTA. The NSTA Board of Directors approved the distribution of the survey and publishing the results.

SAMPLE SURVEYED

The survey was administered to samplings obtained at the three 1978 NSTA Area Conventions in Los Angeles, New Orleans, and Milwaukee. In addition, each Committee member surveyed their respective area (i.e., Louisiana, North Carolina, Minnesota, Florida, Washington, California, Colorado). In addition, other areas were surveyed (i.e., Michigan, Illinois, Ohio, New York) to ensure a valid, random geographic representation.

COLLECTION AND ANALYSIS OF SURVEY DATA

The survey was printed and data were compiled by the Parkway, Missouri School District. The data were tabulated and analyzed by the Oakland Schools, Pontiac, MI, utilizing the Statistical Package for the Social Studies (SPSS) computerized evaluation program.

RESULTS

In all, 210 surveys were received from 162 teachers, 24 administrators, and 30 who checked the category termed "Other". In total there were 41, K-6; 62, 7-9; and 83, 10-12 teachers, and 24 administrators who completed the survey. There were 87 incomplete surveys returned.

Participants ranked the following categories in priority order as they perceived them to be most beneficial as roles of the science supervisor:

1. Instruction
2. Curriculum
3. Staff Development
4. Implementation
5. Management
6. Assessment
7. Assignment, Transfer Load

Figures (1-7) show how K-12 teachers in the survey prioritized the perceived roles of the science supervisor.

COMMENTS FROM SURVEY PARTICIPANTS ON ROLE OF THE SCIENCE SUPERVISOR

Following are some candid comments received from survey participants regarding roles believed to be helpful in increasing a science supervisor's effectiveness:

When we have had supervisors in elementary in the past, it very definitely gives a lift to the program. Teachers need this outside stimulation or they grow sta

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"The Supervisor should have staff available to coordinate and replenish all science equipment and materials so that each teacher has at hand everything needed to teach science lessons effectively."

"What Science Supervisor? The importance of science as an area of study (and thus the Science Supervisor) must be tied in through research and advertisement to the development of the "basic skills" and the education of the "whole" child."

"The most important part is teaching the teachers to teach the materials."

"A careful inspection of work load should be made so this individual does not become mixed up in paperwork and requests as to limit effectiveness!"

"Unfortunately, science supervisors are not just science supervisors. The breadth of subject matter necessitates having an administrator whose exclusive role is dealing with parameters affecting the science program. Science supervisors (or any administrator) needs training in evaluation techniques. Rarely do administrators, as part of their training, receive instruction in evaluation."

"A supervisor is most effective as a helping teacher. His effectiveness is decreased markedly if he is responsible for evaluating (rating) teachers."

"I believe that, as far as it is possible, teachers should teach what they enjoy teaching and what they are qualified to teach. However, I don't believe that it is possible for one individual (supervisor) to have the time to get that directly involved in the selection of staff members and the class schedules of all the schools for which he is responsible. The supervisor's most important task should be to see that science is being taught to students and that it is being taught reasonably well. Anything else is secondary."

"We have 13 elementary schools, 3 middle schools, 2 high schools. Supervisor needs to promote cohesion of programs within a level and between levels, taking a long view rather than restricted view of teachers. Promote exchange of information between leader schools and next level of organization; let middle schools know what high school expects, and high school know what middle school can deliver as foundation for further science course work. Primary concerns: Personnel, Materials and Curriculum, Evaluation and Staff Development."

"I feel the coordinator should make the teacher's job easier not more difficult. This could best be accomplished by having a person who is skilled in organizing materials and volunteers. The creativity this person exhibits should <u>not</u> be in creating programs, forms to be filled out, and new curriculum materials."

"Teachers need to be informed more about science activities by having close relationships with supervisors. Rarely has one been seen much less spoken to about what is necessary to improve science methods. Some of the above assessments are ridiculous. Come down to earth. Meet with teachers, discuss and analyze."

"I would not like to have a supervisor interfere with my class. I feel that I am best able to judge what is best for my students. Supervisors should work more with funding, teaching materials, and coordination of programs between schools, etc. Supervisors should also assist teachers who <u>request</u> help or who are having trouble."

"<u>Provide</u> materials to accompany science concepts/kits-keep updated yearly. It is a pain not to have access to 6 pulleys, etc., when the time arises!"

"Should observe science teachers continuously and aid them in correcting any teaching faults they may have."

"Supervisor needs more time to spend with an individual teacher or group of teachers (especiall elementary and junior high) to assist them in laboratory methods, hands-on techniques, etc., this is especially true in junior high where there is a rapid turnover of teachers."

"Develop curriculum, provide in-service or make available/provide needed materials, evaluate curriculum, assume supervisory role for science, seek additional funding, help sort out priori ties, and work with other supervisors in system."

"Science Supervisors should: be available for assistance, solving problems, information available since able to obtain information, giving encouragement, supplying the latest in new research, conventions, experiments, programs, etc., possibly in a monthly or bi-monthly newspape Teachers should be asked for input (i.e., how they solved a particular problem) etc. We, as teachers, are impoverished when it comes to knowledge of how our fellow teachers operate. Som times I get the feeling that our supervisor fears us, so it is easier to keep us in ignorance.

"Supervisor should act as a teacher substitute three times a year for an entire day. Supervisor could thus focus directly on teacher and pupil achievement and problems. This activity should be unannounced, preferably during teacher's absence."

NSTA SCIENCE SUPERVISION RECOMMENDATIONS BASED ON SURVEY

I. The NSTA should adopt a Position Statement on the "Role of the Science Supervisor" as perceived by science teachers with respect to the following role perceptions:

NSTA SCIENCE SUPERVISION SURVEY: ROLE OF THE SCIENCE SUPERVISOR AS PERCEIVED BY SCIENCE TEACHERS WITH RESPECT TO THE FOLLOWING ROLE PERCEPTION (IN ORDER OF PREFERENCE):

1. INSTRUCTION

A. The supervisor should assist in the development of instructional materials.

B. The supervisor should assist in the development and implementation of changes in curriculum which will serve changing student needs.

C. The supervisor should assist with the development and application of techniques to encourage student involvement in science-related extracurricular activities.

D. The supervisor should assist in providing for the systematic review and refinement of methods of instruction to meet individual student needs, e.g., average, handicapped, special education, gifted and talented.

2. CURRICULUM

A. The supervisor should facilitate teacher in-put in the development of science curriculum, written goals and objectives, scope and sequence and selection of texts and materials.

B. The supervisor should assist in evaluating promising new developments in science education.

C. The supervisor should keep science teachers informed about significant new developments in science education.

D. The supervisor should prepare an annual report of the status, accomplishments, need, and unresolved curriculum issues.

3. STAFF DEVELOPMENT

A. The supervisor should develop in-service programs, utilizing a wide variety of techniques and tools, based on stated needs (e.g., safety-OSHA - energy).

B. The supervisor should work cooperatively with other school personnel to stimulate staff morale and promote the achievement of school-wide goals.

C. The supervisor should inform staff members about available professional development activities and facilitate their participation (i.e., institutes, state and national conventions, et. al.).

D. The supervisor should conduct, with teacher participation, research projects related to science curriculum and instruction.

E. The supervisor should assist departments in developing long range objectives.

4. IMPLEMENTATION

A. The supervisor should initiate opportunities for teacher exchanges, class visitations, cooperative teaching, team teaching and demonstration lessons.

B. The supervisor should obtain and disseminate information about alternate sources of funding for curriculum and instruction.

C. The supervisor should involve teachers in the design of new facilities and remodeling of existing facilities.

D. The supervisor should initiate proposals for instructional projects.

5. MANAGEMENT

A. The supervisor should provide information regarding the organizing of materials for efficiency in securing needed materials for daily preparations.

B. The supervisor should prepare and disseminate lists of excess equipment and/or supplies in certain buildings available for transfer to others who need them.

C. The supervisor should provide information concerning laws and liabilities, e.g., animals in classrooms, field trips.

D. The supervisor should provide information concerning OSHA regulations, proper disposal of old chemicals, and other safety precautions.

E. The supervisor should provide information concerning current financial developments and budgets.

6. ASSESSMENT

A. The supervisor should analyze system-wide test results and maintain base-line data on student acheivement.

B. The supervisor should suggest revision in objectives and activities based on test results.

C. The supervisor should assist science teachers self-evaluate their own professional growth and performance (e.g., NSTA Guidelines for Self-Assessment of Secondary Science Teachers, classroom observations and conferences).

D. The supervisor should assist in developing, administering, and interpreting an assessment program.

7. ASSIGNMENT, TRANSFER, LOAD

A. The supervisor should assist in making assignments appropriate to the strengths of faculty members and the need of the program.

B. The supervisor should assist in making teaching loads equitable and fair for each faculty member.

C. The supervisor should assist in resolving conflicts in staffing, budget and material choices.

D. The supervisor should assist in selection of staff members.

QUESTIONS RAISED BY THE SCIENCE SUPERVISION COMMITTEE

1. Science Supervisors are an endangered species. Despite the financial crunch, the call for "back to the basics" and "accountability" movement persists. It has been pointed out that science is basic education and that the subject-matter specialist supervisor is far more likely to have the time and knowledge necessary to deliver that desirable supervisory program (REF. "The New York State Science Supervisors Association Position Paper on SCIENCE AS BASIC EDUCATION - The Need For Supervisory Specialists") -- what would be an appropriate and effective action to get this urgency and information to school systems and the public?

2. Should only large school systems employ a science supervisor? Why not smaller systems (less than 12,000 students) also?

3. What are the Role Expectations of the Science Supervisors as perceived by (a) Superintendent (b) Principals, (c) College Methods Professors, (d) Science Teachers, (e) Science Supervisor Themselves—and how do they compare?

4. How do incumbent Science Supervisors effectively survive their positions if under "threat or danger of extermination?"

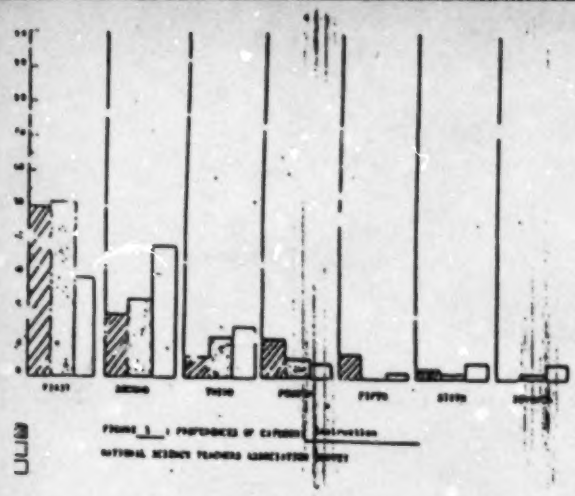
5. How does the Science Supervisor effectively coordinate the science program, K-12? How does the work accomplished in elementary school aid/hinder the middle school curriculum? How does the middle school curriculum/aid hinder the high school curriculum?

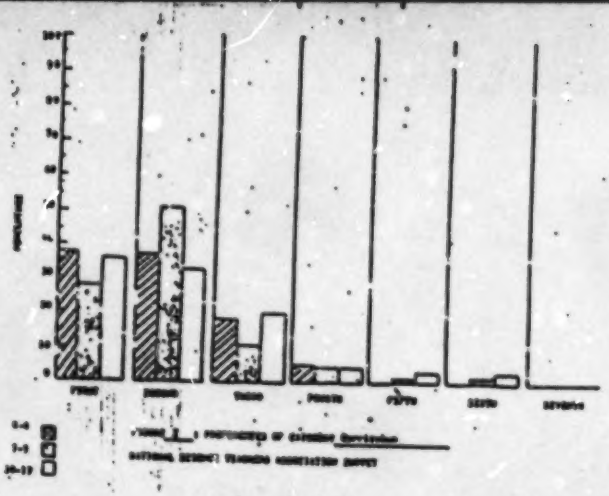
II. The NSTA, through the Supervision Committee, should expand this survey to include other groups of educators, such as Superintendents and other administrators, science educators (college methods teachers), and science supervisors themselves and analyze whether their perceptions are similar to those of science teachers surveyed.

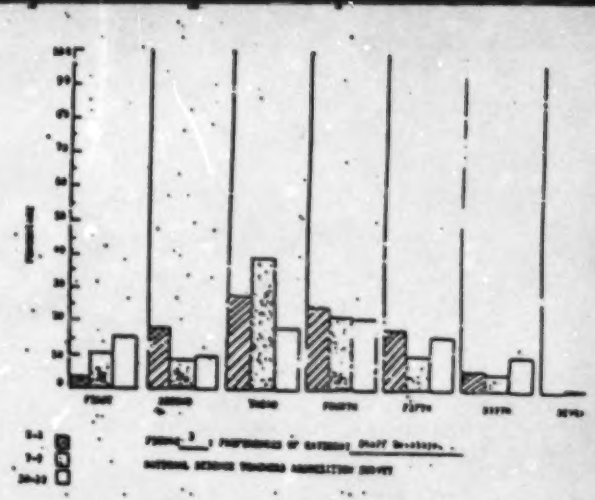
III. The NSTA should adopt or endorse the N.Y. State Science Supervisors Association (NYSSSA) Position Paper on "Science As Basic Education-The Need For Supervisory Specialists".

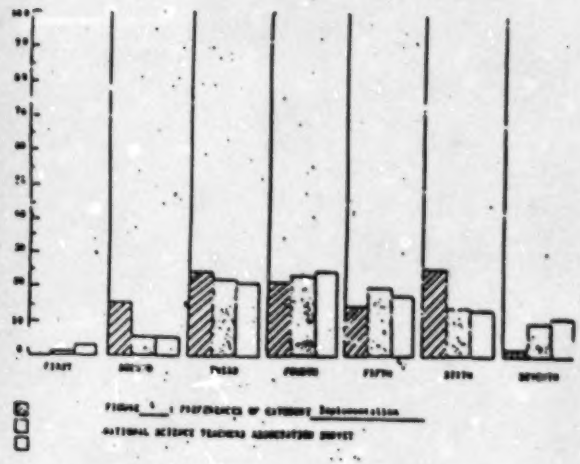
CONCLUSION

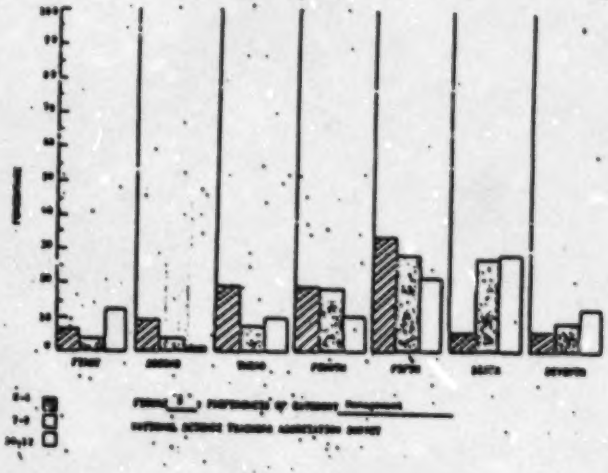
In a time when accountability has become a watchword in education, when confidence in the public schools is at its nadir, and when the budget crunch has forced many school systems in America to move towards generalists, the results of this survey may help to contribute positively towards better implementation of the science program at the school system level. The survey results obviously raise more questions than answers. Hopefully, discussions on these results will generate resolutions to the problems and frustrations that many science educators face today. The NSTA Division of Supervision recommends further study in this area to help delineate the role functions of the Science Supervisor in America today.

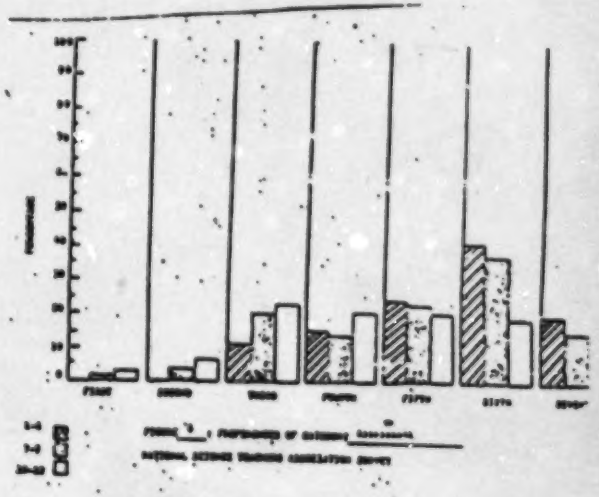


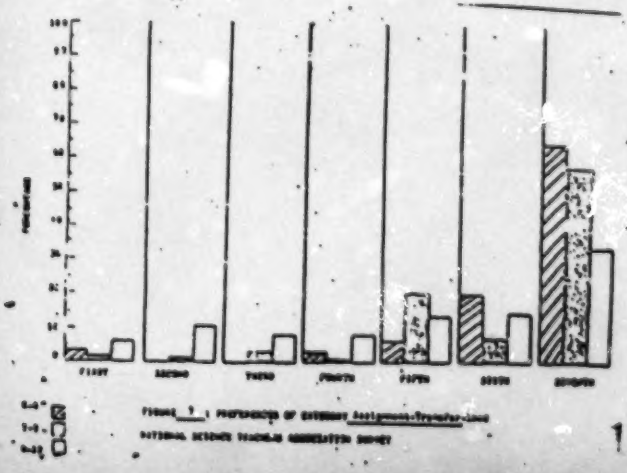












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